

# Outdoor *Delaware*

SPRING 2018

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*and more!*





# Frontlines



SINCE ITS INCEPTION, *Outdoor Delaware's* mission has been to connect people to nature, for recreation, health and to instill an appreciation for our precious natural resources.

Among other articles, we feature stories about how, in our state parks, wildlife areas, nature preserves, and other natural areas, DNREC is responding to the needs and desires of our visitors to make these areas better, more available, and accessible.

Because we are doing our best to attain these goals, the number of visitors to these areas is increasing. For example, nearly five million people visited our state parks in 2016 because we have made room for larger recreational vehicles, built new playgrounds, and ensured that our park beaches remain world-class so that everyone can enjoy them.

This is obviously making a difference, not just in the numbers of visitors to our state parks, but also with in the economic impact these increased numbers have on our state's economy. In fact, according to the first economic impact study of the parks system by Rockport Analytics, for every dollar of operating general fund tax dollar support parks receive, \$40 was returned in economic activity. That is more than double the return of neighboring states, including Maryland (\$18), Virginia (\$13), and Pennsylvania (\$12).

#### *The study also shows that:*

- Nearly \$400 million was generated by park visitors who traveled 50 or more miles with a Delaware state park as their specific destination. These park visitors spent about \$245 on various goods and services which creates a tremendous economic impact in the First State.
- If there were no Delaware state parks system, each Delaware household would need to pay an average of \$151 in additional state and local taxes in order to maintain current levels of tax receipts.
- In 2016-17, nearly \$53 million in state and local taxes were generated by the parks system, including \$12 million in hotel taxes, \$4.7 million in income taxes and \$9.5 million in property taxes.

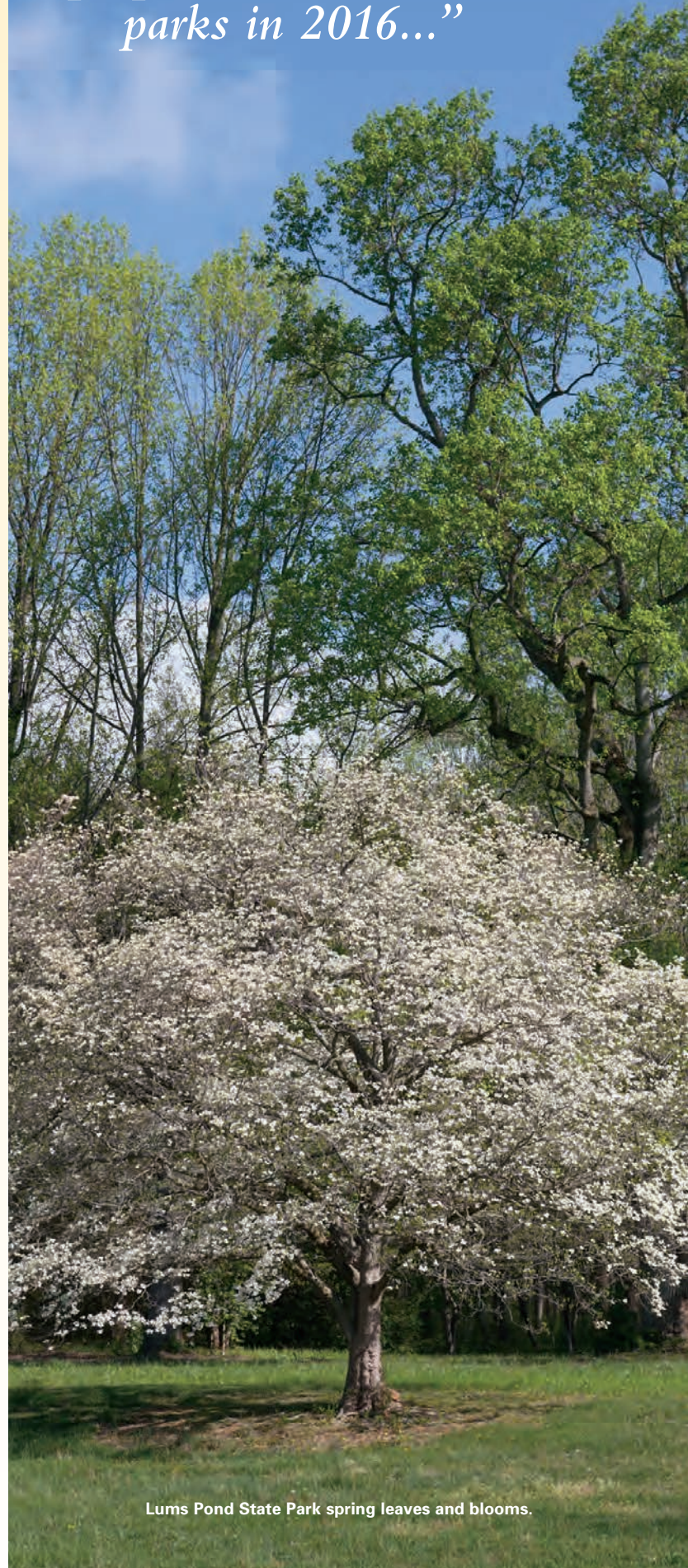
Delaware's nationally award-winning parks are also an attraction to businesses looking to relocate. Recreation and open spaces are quality-of-life factors that help recruit businesses to locate in Delaware.

But the figures mainly show that every time you visit a state park, you are not only connecting with nature and having a great time, you are also contributing to the state's economy. You are supporting all the terrific programs that make our state park system one of the best in the nation. **OD**

A handwritten signature in black ink, appearing to read 'Shawn M. Garvin'.

SHAWN M. GARVIN, SECRETARY

*“...nearly five million people visited our state parks in 2016...”*



Lums Pond State Park spring leaves and blooms.





# Outdoor Delaware

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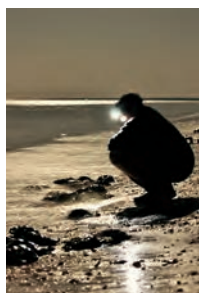
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It's a beautiful, "warm-ish," sunny day, and you want to pull out your canoe or kayak and get out on the water. If you're in Dover, Silver Lake is a prime destination. The trees are just beginning to bloom and the water is like glass. But underneath the water, all sorts of tiny organisms call Silver Lake home, some of which are unhealthy. And while these might look scary under a microscope, the creatures pictured here are harmless. Take a fascinating underwater journey to the microscopic world of Silver Lake.

# What's Unseen Beneath

PHOTOS BY DR. JERRY NELSON

STORY BY CLARK NELSON

**L**ONG-TIME DELAWARE RESIDENT Dr. Jerry Nelson spent his working years as a chemist with DuPont. Five years ago, in his late 80s, he told his kids – seemingly out of the blue – “I’ve always been interested in microscopy.”

Shortly thereafter, what was once a bedroom became a full-blown microbiology lab complete with microscopes, an endless supply of slides and coverslips, specialized lighting, and all the intricate glasswork, stains, chemicals and tools necessary to peer like a scientific voyeur into the fascinating hidden world of extremely small organisms. Conversations with him quickly turned to excited exclamations about his latest observations, a newfound protist, or descriptions of the almost unbelievable antics of these organisms. Suddenly, a previously unrealized lifelong interest had turned into an intense passion.

Jerry uses an optical binocular microscope with a special lens to transmit

images to the computer monitor, and capture photos and videos. The objective lenses allow magnifications from 10x up to 60x. He slowly scans a single water drop at 10x magnification until he spots something interesting. He then zooms in to higher magnification on the scope, or projects it onto the computer monitor for more detailed study. Shunning the world of one-celled bacteria as too boring, Jerry prefers the entertaining antics of those more evolved protists as they eat, move, reproduce, romp about, and basically carry on their daily life activities.

With millions of species, identification can be a real challenge. He resorts to several books from the rich legacy of protist microscopy, to consultation with local experts and perusal of blogs and other websites from scientists and fellow enthusiasts around the world. The study of these organisms goes back centuries and continues with even more rigor today, in both amateur and scientific communities.

*Continued on page 7*



**Nauplius larva.** This free swimming plankton is the larval stage of a freshwater crustacean.



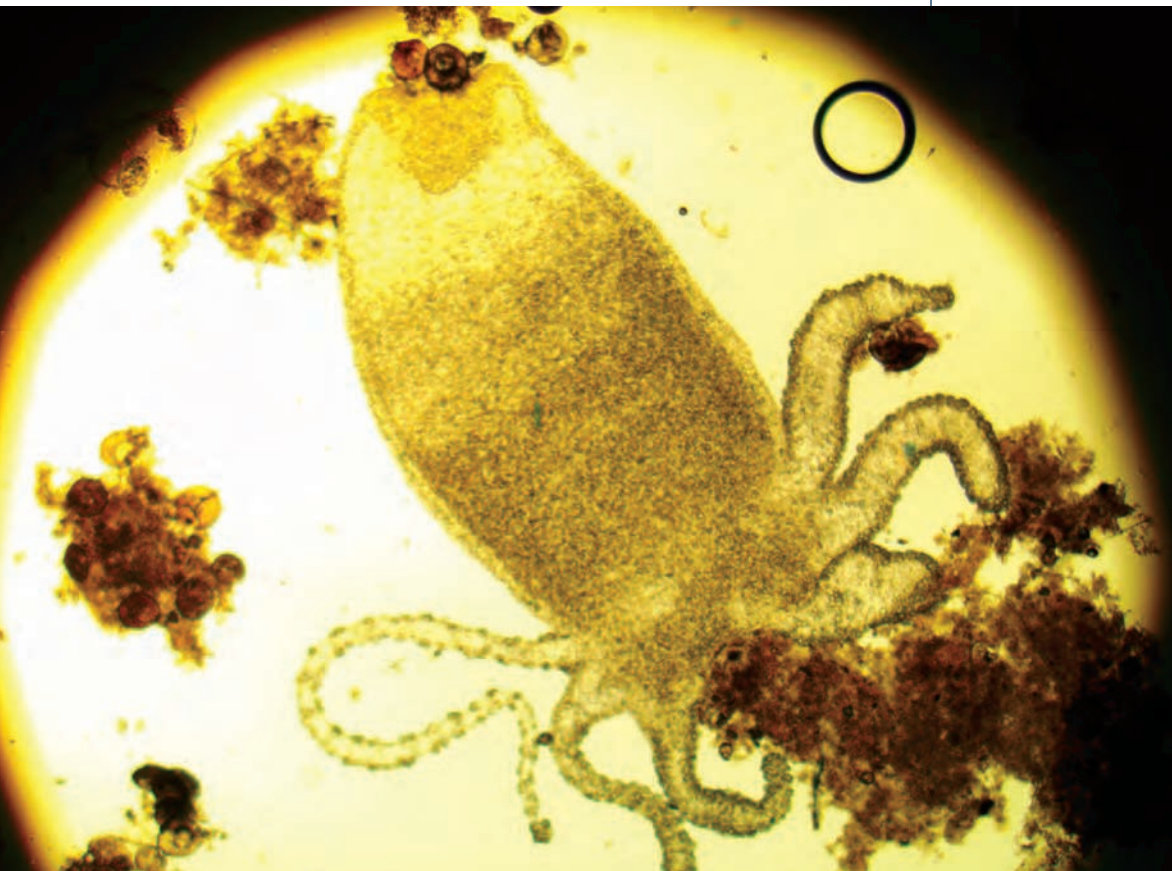
**Philodina in a relaxed state.** Freshwater members of the Philodina genus are multicellular, consisting of approximately 1000 cells. They are typically less than .5mm in length. Philodina, sometimes referred to as rotifers, appear to be able to survive for perhaps hundreds of years in dried or frozen states. They are critical to natural water purification processes, as they help break down organic materials, and serve as a food source for other important species.



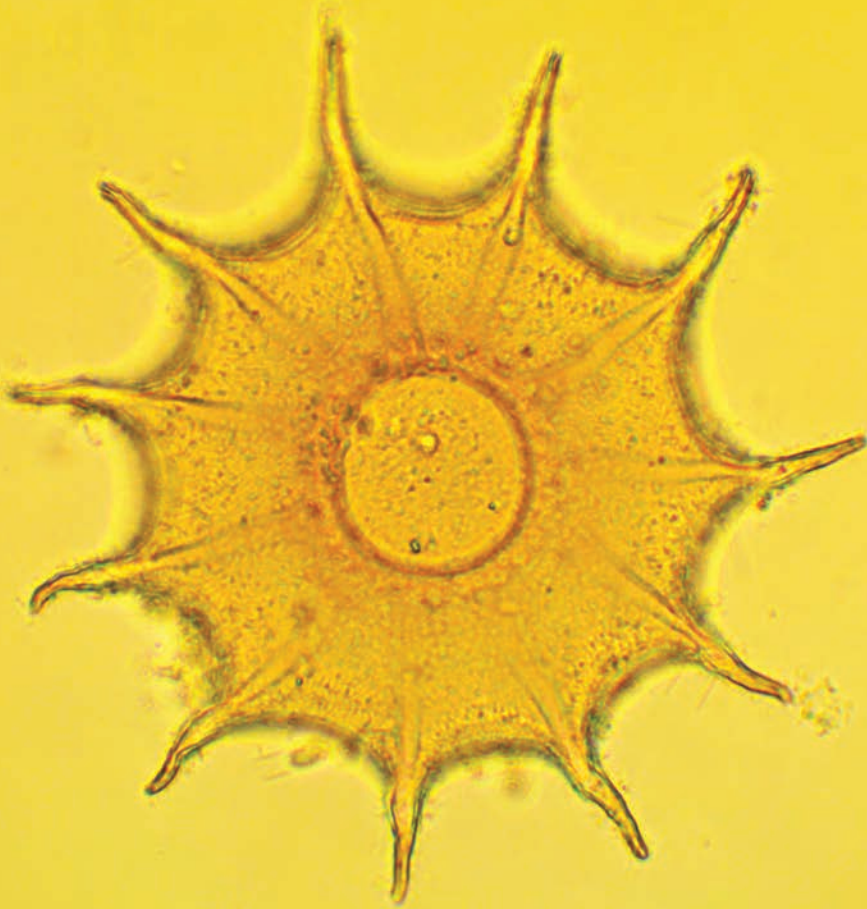
**These multi-celled organisms are from the genus Hydra.** Hydras consist of a hollow cylinder, closed at one end, with tentacles and an opening on the other end. They range from .5mm in length when contracted, to several times that length when their bodies are extended. These organisms are carnivorous, stunning their prey with emitted toxins before pulling them in for digestion. Hydra are generally sedentary, but do move by looping and somersaulting end over end, moving as much as 100mm per day. Scientists are fascinated with the genus because the organisms don't seem to age or die of old age.



All specimens are single- or multi-celled freshwater organisms found in still water taken from Silver Lake in Dover, Delaware in 2013 and 2014.

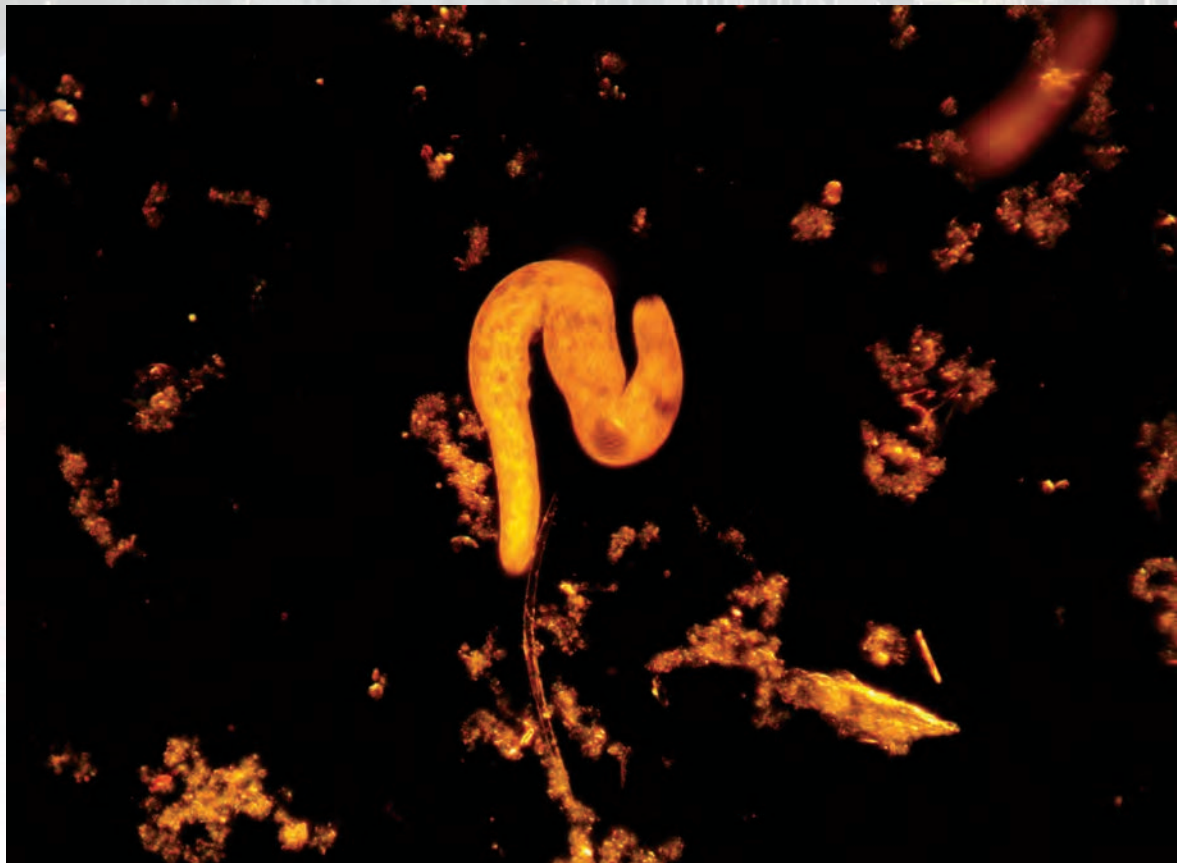






**Arcella** is a single-celled protist living inside a shell structure which is typically only 300 microns in diameter. Finger-like pseudopods emerge from the hole in the center of the shell to help it move, and to capture food such as diatoms, unicellular green algae and a variety of other microscopic organisms.

**Spirostomun** are one-celled protists, the bodies of which are covered with tiny hair-like structures called cilia. The cilia, while not visible in this photo, are used to sweep bacteria into the body for food. When stimulated, this organism can contract its body to  $\frac{1}{4}$  its size in under eight milliseconds – the fastest known contraction in any living cell.

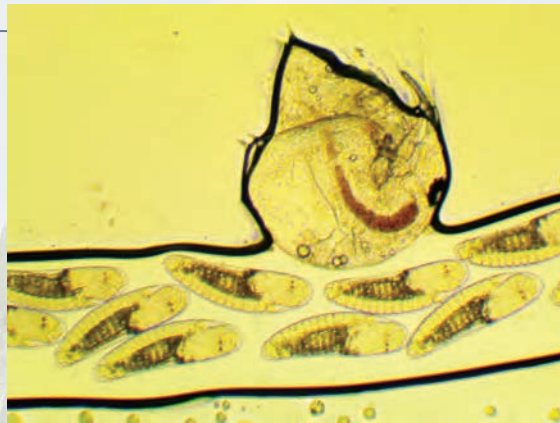






**Copepod.** These tiny crustaceans are typically less than 1mm in size, but make up for it with their sheer volumes as part of the zooplankton communities. They feed on organic detritus and bacteria, and in turn, are a major food source for small fish. Copepods are critical to maintaining global ecology and the carbon cycle. In some countries, they are purposely introduced into water sources to help eliminate disease-bearing mosquitos.

**Annelida.** These microscopic views of segmented worms are streaming through an organic tubular structure that has bulged out on the side. These "worms" are significantly less than 1 mm in length, though certain species can grow several meters in length, and include more commonly known examples such as earthworms and leeches. Several thousand species of segmented worms inhabit environments as varied as land, oceans and fresh water bodies.



**Nematodes.** Similar to this specimen, nematodes are small slender worms, typically five to 100 microns thick, and 0.1 to 2.5 mm long. They inhabit virtually every environment on Earth. They are so numerous that they are often encountered in concentrations of one million individuals per square meter. Nematodes feed on bacteria, fungi and other organic materials, helping to maintain the ecological balance in our environments.

## What's Unseen Beneath

*Continued from page 4*

These organisms hold many mysteries yet to be unlocked. Many are critical to maintaining healthy ecological balance worldwide, while others cause fatal illnesses to millions of people. Some are found inside the deepest mines over three kilometers beneath the surface, all the way to the top of the highest peaks and in the hottest and coldest places on earth. Some can survive in frozen or dehydrated states for hundreds of years, only to return to life once conditions change. Others are believed not to age at all, presenting the intriguing possibility of eternal life, or at least one of the keys to the oft-sought fountain of youth. One thing's for sure - these unseen critters are on us, all around us and everywhere on earth in great, but unseen profusion. **OD**

CLARK (KIP) NELSON RECENTLY RETURNED HOME TO NEWARK, DELAWARE AFTER 40+ YEARS AWAY, TO BE A COMPANION TO HIS FATHER JERRY, AND TO SHARE IN THE ENTHUSIASM OF ALL HIS PASSIONATE PURSUITS.







# "The DNERR Blog Diaries"

## *One Volunteer's Experiences at the Delaware National Estuarine Research Reserve*

In honor of National Volunteer Week, observed each year in April, a local writer recounts the rewards of volunteering at the Delaware National Estuarine Research Reserve (St. Jones Reserve in Dover and Blackbird Creek Reserve in Townsend).

DNERR is one of 29 National Estuarine Research Reserves across the country whose goal is to establish, protect, and manage natural estuarine habitats for research, education and coastal stewardship. It was established in 1993, and is a cooperative program between the state and the National Oceanic and Atmospheric Administration.

STORY AND PHOTOS BY M.L. CHRISTMAS



### *Dear DNERR Diary:*

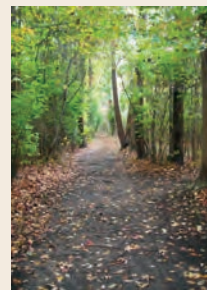
Volunteering as a guest-blogger for DNERR has been an exciting, still unfolding, adventure. I hoped to be a volunteer as a way of helping the local community while trying something new. It has done all of that, and then some. Following are some highlights from my own particular path, in case they might be inspiring to other would-be volunteers.

#### **The contemplative experience**

A good place for anyone to start, before volunteering, is with some self-examination. The best contemplative settings are found outdoors, in quiet, unspoiled surroundings. DNERR has that covered. Here are two examples from my blog posts.

*"Thoughts on a Rock" - ...From here, seated on The Rock, when facing the marsh, the channel of the path runs left, the channel of the path runs right - using one's feet. But in one's spirit, as with any given spot in life where one stops to ponder, the higher paths run in all directions. Here, they also soar over*

*the tops of the tall marsh grasses, over the face of the waters, and to the far horizons.*



*"Take a Bath in the Woods" - Shinrin-yoku is the Japanese practice of taking a leisurely stroll through the woods while steeping oneself in its sights, sounds, and smells. At DNERR, one can become immersed in the wildness of nature regardless of the season:*

*whether admiring autumn's red, orange, brown, and gold-confettied carpet or gazing into winter's leaf-lined puddles of re-frozen snowmelt alongside the meandering trails.*

#### **New wildlife experiences**

Volunteering for DNERR was anticipated to bring new wildlife experiences. At the reserve, I have now crossed paths, directly or indirectly, with bald eagles, marsh wrens, foxes, raccoons, and even a possible skink.





***"Go Terps! Follow that Turkey!"*** – If ever one needed a good reason to drive carefully while at DNERR and its environs, here is living proof: my experience this week when paying a special visit to the St. Jones Reserve and the adjoining Ted Harvey Conservation Area, and with it, the sighting of a lovely, little turtle in the middle of the road, moving slowly but steadily toward the other side... No other vehicles were around, so I got down on my knees and elbows, right in the gravelly roadbed, for a proper face-to-face view. Back in the car, only a short distance away, a wild turkey dashed across the road and disappeared, headed the same way as the turtle.

***"The Marsh a Happy Habitat ... for Hummingbirds"*** – So...there I was, sitting again on The Rock, when I heard a whir of wings accompanied by a flurry of dainty "chipchip" sounds. My head whipped around, in search of the source: a ruby-throated hummingbird! Out on the estuary! And as happy as a, uh, clam! My little friend had flown in from the direction of the marsh, taken a quick look at me, and then zipped into a nearby tree.

### **New personal experiences**

Volunteering for DNERR was expected to offer new ways of physically and mentally stretching myself while gaining a greater appreciation for the outdoors. Here, from the observational standpoint of blogging, I tagged along on some of DNERR's public programs.

***"Canoe! You Can, Too!"*** – The DNERR eblast of upcoming events spurred me to action. Having enjoyed the St. Jones Reserve from various terrestrial vantage-points, and then writing about them, it was time for me to take to the water and to do so at the Blackbird Creek Reserve. One should not go around recommending to others what one would not first do oneself. For the sake of journalistic integrity, it was high time for me to heed the clarion call: to the canoe!

***"Return of the Gytaku (Or, All the Fish That's Fit to Print)"*** – When reporting for volunteer-duty at the St. Jones Reserve's Visitors Center on National Estuaries Day 2016, I was met, going out the door, in the opposite direction by an adult carrying aloft a fresh sheet of art paper festively daubed in bright colors of a generally fishlike shape, but with no little kid(s)





trailing alongside. That was all I needed to see to know that the mysterious, elusive Gyotaku was lurking inside, ready and willing to engage with all comers. One of the lab stations had indeed been set up for the family-friendly activity called Gyotaku, the Japanese art of “fish printing.” The person who made this fish print has a master’s degree. Another example, drying nearby, was devised by someone with a Ph.D.!

### Making new friends and contacts

Volunteering for DNERR, I thought, could also be a way to meet new people (fellow volunteers) and to get to know some of DNREC’s research scientists and other staff members. It has indeed!



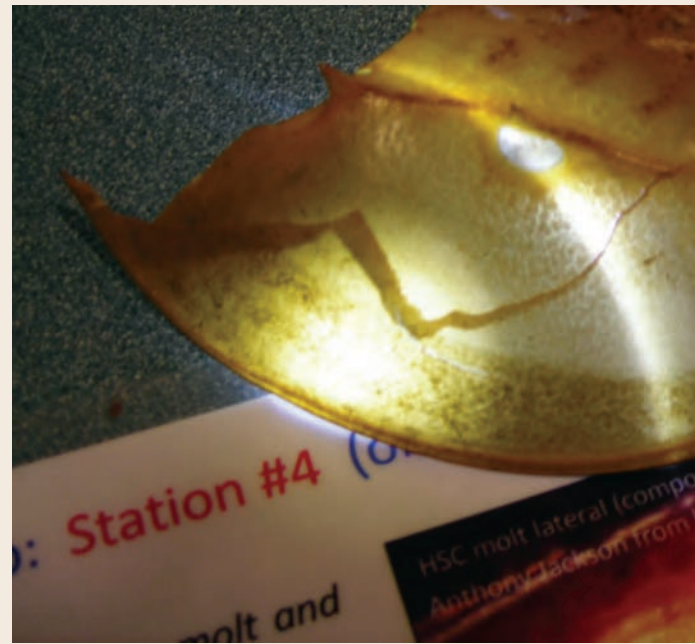
*“DNERR Volunteers Gather, Gab, and Enjoy the Glow”* – Volunteer Appreciation Night was the latest opportunity for DNERR to roll out the lighted carpet of flameless LED luminarias, lay out an array of tasty food, unfurl the big screen, and to fête our loyal band of volunteers and their families. A windy night in December was perfect for sharing in the warm, festive atmosphere of the Visitors Center at the St. Jones Reserve and basking in the glow of appreciation being extended by DNERR’s administrators. Educational “mixer” activities included a dune-grass planting, exercise involving toothpicks and bins of sand, with the evening’s honorees working in teams.

### *“Delaware’s Rainfall: Seriously Spikey! Just ask Dr. Kari St. Laurent”*

— A bright, bristly weather-chart spied on the research laboratory wall at the St. Jones Reserve on National Estuaries Day, cried out for revisiting. Because a pirate’s best friend just may be the weather, or possibly a good chart, an irresistible combination of the two caused this would-be pirate to return recently to the Reserve for a special interview with Dr. Kari St. Laurent. She holds a Ph.D. in oceanography, but meteorology is her superpower! Sounds intimidating, but she is accustomed to explaining scientific data in everyday terms, and she especially enjoys when she can correlate the weather to a visitor’s own personal experience. This became readily apparent when she worked that very magic on this guestblogger.

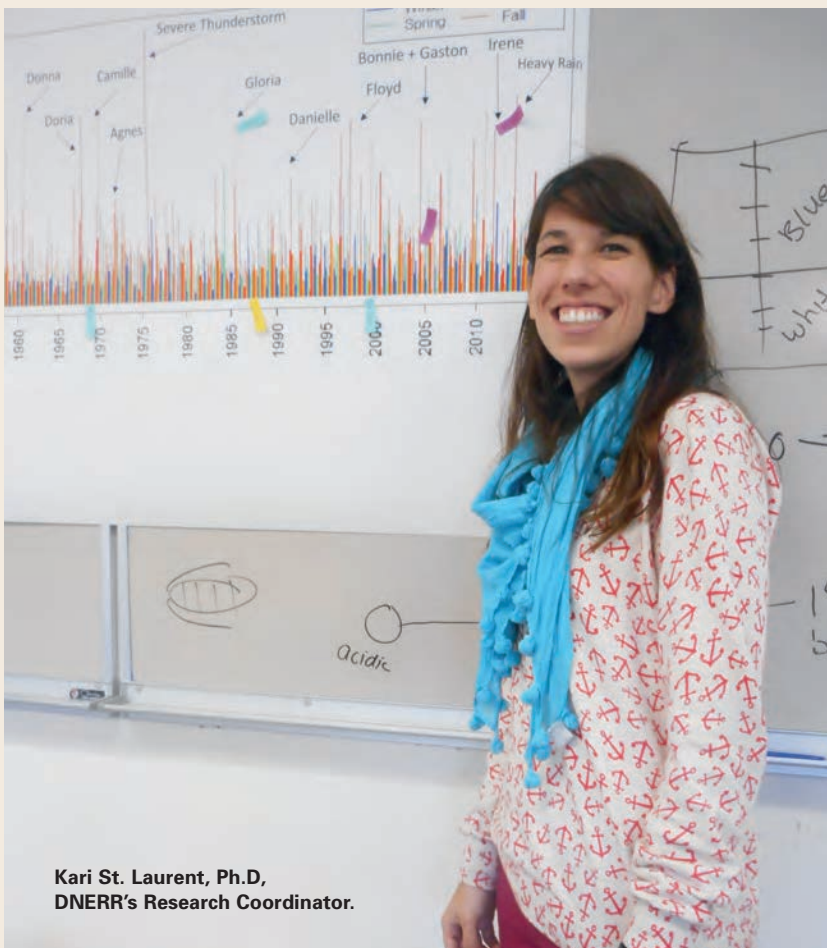
### The all-important educational experience

Volunteering for DNERR was especially intended to be a way to encourage educational growth. Righto! That’s DNERR’s raison d’être!



### *“Being a Shadow? Not too Scary! In Fact, It’s Downright Cool!”*

— An important part of Education Volunteer Training is assuming the identity of a shadow and following Maggie Pletta, DNERR education coordinator. While it sounds like stealthy spy-stuff, involving a whiff of danger, the shadowing is done in broad daylight and could not have been more illuminating. The accompanying photo may look rather sinister, but the process of using the penlight to observe the various sets of horseshoe crab eyes will also allow you to see the poetry! Yes, there is poetry in horseshoe crabs. (See more photos of horseshoe crabs on page 16.)



**Kari St. Laurent, Ph.D.,  
DNERR’s Research Coordinator.**





***"DNERR Skills are Transferrable to Civilian Life"** – An off-season stroll along the sands of Rehoboth Beach, a mere 72 hours after attending DNERR's Education Volunteer Training, unexpectedly allowed this writer to flex some new knowledge. We saw about a half-dozen horseshoe crabs, and as we bent to examine one of them, I pointed out to my spouse the crab's median eyes. One could look at horseshoe crabs for years and never notice those secret "spy eyes" until they are revealed to you. Then, from out of the deep, another mystery presented itself: a seahorse! In all my time strolling on Delaware's beaches, I had never seen a seahorse "in person" before. In a chat a few days later with Maggie Pletta, she revealed that the occasional seahorse gets gathered in the nets when DNERR trawls the mouth of the St. Jones, where it opens into the Delaware Bay.*

### **The adventures continue!**

The rewards of volunteering are available to you too. Come join in the fun – lead a group, participate in a horseshoe crab count, lend your assistance with special events – and then write about it for DNERR's blog <http://dnerr.blogs.delaware.gov/>! Or, don't write about it: Just help!

Interested in volunteering at DNERR? Contact Margaret Pletta, education coordinator and blog editor, at [Margaret.Pletta@state.de.us](mailto:Margaret.Pletta@state.de.us), (302) 739-6377.

Estuaries not your thing? Many other opportunities are available. Check the DNREC volunteerism website and consider the possibilities! <http://www.dnrec.delaware.gov/volunteer/Pages/default.aspx> **OD**

### *Your own adventures await!*

M.L. CHRISTMAS, MSM, IS A FREELANCE WRITER/EDITOR LIVING IN THE DOVER AREA. SHE IS A LONGTIME MEMBER OF DELAWARE PRESS ASSOCIATION AND THE NATIONAL FEDERATION OF PRESS WOMEN.





*40 Years*  
*of*  
*Preserving*

*Delaware's  
Natural Areas*

BY EILEEN BUTLER

Cut-leaved toothwort.



**T**HOMAS JEFFERSON was correct in his assessment of Delaware as being a “jewel of a state.” Although small in size, Delaware is rich with a variety of natural landscapes. It has beaches, wetlands, steep slopes, ponds, rolling hills, forests, scenic river corridors, and fertile farmland. Lifelong residents and new residents alike are attracted to Delaware’s special combination of towns, cities and open space.

Almost everyone has a special place that promotes a good feeling about self, country, state or our natural heritage. It could be a farm or forestland, a special hiking trail or a favorite patch of wildflowers. As a landowner, you may be concerned about the fate of your land and how to preserve its specialness. You may own a farm or woodlot and wish to see it properly managed in the future. You may have a unique natural area and wish to preserve its values as a wildlife habitat or a wildflower site. Perhaps your property has a scenic view



**Cut-leaved toothwort.**

you wish to protect. Whatever its features, your property has values that are important to protect for your enjoyment and that of future generations.

Delaware’s General Assembly saw this need to preserve Delaware’s natural heritage and in 1978, passed the Natural Areas Preservation System Act. It was the first piece of legislation in the state’s history with a goal to permanently preserve Dela-

ware’s natural, geologic and archeological resources.

The purpose of the law is to “secure for the people of the State of present and future generations the benefits of an enduring resource of areas having one or more” of the following characteristics: unusual flora or fauna, biotic, geological, scenic or archaeological features of scientific or educational value. Legislators noted that “it is necessary and desirable that areas of unusual natural significance be set aside and preserved for the benefit of present and future generations before they have been destroyed, for once destroyed they cannot be wholly restored.”

### **How It’s Done**

In selecting a state-recognized Natural Area, DNREC’s Office of Nature Preserves, in conjunction with the Division of Fish & Wildlife Species Conservation and Research Program, State Historic Preservation Office, Delaware Geological



**Fork Branch Nature Preserve.**





**Fork Branch Nature Preserve.**

Survey, and/or other appropriate resource professionals, evaluate a site based on outstanding vegetation community or habitat, species rarity, and outstanding geological and archeological features.

According to the legislation, natural areas “shall mean an area of land or water, or both land and water, whether in public or private ownership, which either retains or has reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value.”

### **Leaving a Lasting Legacy**

As stewards of the land, we are all charged with the responsibility of protecting our natural legacy. Government action will be inadequate without the active cooperation of private landowners. Legislation alone cannot protect and preserve all the land deserving of protection. Likewise, there will never be enough public funds available to purchase all valuable scenic and natural lands to meet open space, recreational and wildlife habitat needs.

Once an area has been formally included on the State Natural Areas Registry,

a landowner (public or privately owned land) can permanently preserve all or a portion of the natural area by dedicating it as a State Nature Preserve through legal documentation (conservation easement or articles of dedication) that identify restric-



**Barnes Woods Nature Preserve.**

tions to be placed on the property, ensuring the protection of the conservation values specific to the site. Conservation values are defined as the “natural, geological, or archaeological features specific to each nature preserve.” A landowner does not give up ownership of the property, nor does dedication permit public access on private property.

Each dedication of a nature preserve is a unique experience for each landowner. We work with the conditions of the site to be protected, consider the conservation values identified on the site and the long-term preservation goals of the landowner. Restrictions are agreed upon by both parties and specific to the landowner’s desires.

For many reasons, a landowner may want to consider dedicating land for permanent preservation. It may be the love of the land and the species that depend on it. It may be the potential tax benefits for current and future generations. Or it may be the philanthropic tendencies of a landowner who wants to contribute to the ecological needs of their area. Or it could be a bit of all three reasons.

Delaware currently has 29 state-dedicated nature preserves, incorporating over



6,000 acres of land. DNREC's Division of Parks & Recreation has nine parks that showcase 16 State Nature Preserves providing a variety of experiences for visitors. These preserves protect some of Delaware's finest natural habitats and are home to an amazing diversity of plants and animals. From the steep slopes of the White Clay Creek Valley Nature Preserve to the sandy shoreline of Rehoboth Bay Marshes Nature Preserve, there is a State Nature Preserve for every nature lover.

### Public Private Partnerships

On Arbor Day, state parks will be partnering with the Old Growth Forest Network – a national non-profit organization that has a goal of protecting mature forests from logging activities while encouraging public access and use of such areas – to designate three State Nature Preserves into the network. Tulip Tree Woods Nature Preserve at Brandywine Creek State Park, Fork Branch Nature Preserve in Dover, and Nanticoke River (Barnes Woods) Nature Preserve outside Seaford will soon be identified within the national network of protected forests. In fact, Delaware, staying true to the First State motto, will be the

### These state parks provide parking and trails in their nature preserves for visitors to experience and enjoy:

<b>Bellevue State Park</b>	Bellevue Woods Nature Preserve
<b>Brandywine Creek State Park</b>	Tulip Tree Woods Nature Preserve Freshwater Marsh Nature Preserve Flint Woods Nature Preserve
<b>Cape Henlopen State Park</b>	Beach Plum Island Nature Preserve
<b>Delaware Seashore State Park</b>	Rehoboth Bay Marshes Nature Preserve Thompson Island Nature Preserve
<b>Killens Pond State Park</b>	Fork Branch Nature Preserve
<b>Lums Pond State Park</b>	Lums Pond Woods Nature Preserve
<b>White Clay Creek State Park</b>	White Clay Creek Valley Nature Preserve

*The above nature preserves list is not exhaustive, but some areas do not have easy access, parking, or trails associated with them.*



Fork Branch Nature Preserve.

first state in the nation to dedicate a forest in each county to be identified in the Old Growth Forest Network.

### Preserves and You

Next time you are thinking about an outside activity for the day, think about taking a walk in a nearby State Nature Preserve. There are many options and many environments to choose from.

In addition, you may be wondering how you can get involved and leave a lasting legacy to your family and future generations of Delawareans. We are eager to talk to you. Please contact the Natural Areas Program at 302-739-9239 to discuss conservation options for land preservation, and learn more about how your property fits into the big ecological puzzle that is the state of Delaware. **OD**

EILEEN BUTLER IS DNREC'S NATURAL AREAS PROGRAM MANAGER.



# The “Lowly” Horseshoe Crab

BY MARGARET PLETTA

CONSIDER WHAT MANY PEOPLE THINK OF AS THE “LOWLY” HORSESHOE CRAB. We see them washed up on the beach every spring. Those who are kind flip them over. But many people just think of them as a smelly nuisance or something to be feared. But horseshoe crabs are far from that. They’ve been around since prehistoric times; in fact their fossils can be found in the fossil record as far back as 450 million years. And they are crucial to the web of life for migrating shorebirds.

Every spring thousands of horseshoe crabs appear on the shores of the Delaware Bay to lay their lipid-rich (or fatty acid-rich) eggs to produce the next generation of crabs. These eggs also provide a much-needed meal for millions of shorebirds so they can complete their journey to their arctic breeding grounds. Horseshoe crab eggs provide a plentiful food source that shorebirds can digest quickly and store as fat for the energy needed to complete the final leg of their journey north. This is important, since some of these birds will have flown close to 5,000 miles to arrive in the Delaware Bay and have used up all of their stored fat before arriving.

In the late 1990s, due to a decline in sightings of shorebirds, specifically the red knot, scientist started to monitor horseshoe crab populations more closely and began managing the use of horseshoe crabs. One way they began to monitor the crabs was through conducting spawning surveys of the crabs on the Delaware Bay beaches, and this survey continues today.

In order to complete the number of surveys needed to make management decisions, the government agencies and non-profits that lead the survey turned to the use of volunteers. Every season, hundreds of volunteers assist in the completion of the survey. Without this dedicated group, the surveys could not be completed. Thanks to these volunteers and the continued monitoring of spawning crabs and their populations, resource managers are able to ensure there will be crabs in the future for migratory shorebirds.





By the contrast of a full moon, a simple headlamp illuminates healthy numbers of horseshoe crabs as we conclude our survey well after midnight at Kitts Hummock east of Dover.

# Horseshoe Crab Survey

PHOTOS BY J.R. FUTCHER

FOR MORE THAN 10 YEARS, I've been participating in the annual Horseshoe Crab Spawning Survey, volunteering with the Delaware National Estuarine Research Reserve (DNERR) as part of the larger baywide survey. My role has evolved into a rewarding responsibility as a team leader. In 2012, I was proud to be recognized by the state for "Outstanding Environmental Leadership." Over the years, I have taken photographs for documentation, so that one day, I may tell the story from my experiences.

The spawning survey occurs in numerous coastal communities in Delaware and New Jersey, and provides data to support and guide management decisions on the Atlantic horseshoe crab in the Delaware Bay.

The scope of the surveys spans many coastal beaches and shorelines, and the surveys I have photographed are collecting important data. My family grew up with the crabs on the Delaware Bay, and as a team leader, I am eager to return every spring season and join many friends in protecting our marine environment.

The data we provide is added to that data collected baywide, resulting in a spawning index. We use a quadrat (a square frame) that is placed on the beach to count the horseshoe crabs. Sometimes we count zero in a quadrat, although we often count multiple crabs, and must seek out the stealth female buried in the sand as the males find their way and move in close. Almost always there are more males than females, but to be sure, we look and feel for the burrowed females and count from there.

The sight of a few hundred - if not thousands - of our little friends from the sea is quite breathtaking. I have taken photographs in so many conditions and across many hours of the day, that just one photograph can tell a story. The solitary crab, or the assembly of hundreds, is plenty for the camera.



The illuminated remnant of the abdomen's thin (and young) shell on a fresh winter morning, indicates a horseshoe crab molting among many in the process of maturing.





# The "Lowly" Horseshoe Crab

BY JR FUTCHER



The double tail I observed a few years ago was a surprise find on one of my walks. A rarity for a photograph, the crab with two tails made a "wake" of sand as this adult male commuted toward the bay.



Carcasses of sea life are often included in storm surf detritus. This fully mature female was at rest high above the tideline.



A few males surround this individual female on North Bowers Beach, but often, the number of males can be greater.





Oftentimes, a male and female can be found in broad daylight for hours on many beaches at high tides. This pair was nestled in the surf of Lewes Beach in the lower Delaware Bay.



# Exploring<sup>the</sup> Burton Island Trail

STORY AND PHOTOS BY MARK NALE

THE WHITE SAND WAS SOFT UNDERFOOT and the almost-glowing, yellow blossoms of prickly-pear cactus accented the otherwise sparse vegetation. A trio of glossy ibises left their perches in a scrubby pine tree, while an osprey soared overhead. Pines, black cherries, cedars and bayberries were scattered on both sides of the path – allowing glimpses of the bay between the trees.

This was my inaugural visit to Burton Island last summer, and I was surprised to be walking through a sand dune habitat this far from open ocean. As I soon learned, the 1.3-mile trail circling Burton Island Nature Preserve is full of surprises, abundant wildlife and spectacular views.

In addition to dune habitat, the trail traverses a deciduous forest and a stand of loblolly pines, with views of open water and boardwalks crossing wide expanses of salt marsh. This variety is one of the trail's strong suits – with the salt marsh a habitat most people rarely get to experience.

With help from the U.S. Department of the Interior's Bureau of Outdoor Recreation, DNREC acquired Burton Island in the fall of 1971. The price tag for the 250-acre addition to Delaware Seashore State Park was a hefty \$1,942,500. However, thanks to forward-thinking people nearly five decades ago, the island was preserved as wildlife habitat and is open for public use.

"Burton Island is a perfect example of a nearly-pristine maritime environment," said Delaware Seashore State Park Superintendent Doug Long. "It was a huge coup for DNREC to be able to pick up that resource in 1971. It is a priceless piece of real estate with great views of the bay."

The trail that I was walking has been on the island since the 1980s. However, it was reborn in its current form after extensive work was done in 2008 and 2009 to repair storm damage. Over \$133,000 in materials and labor by park staff was invested to improve the trail. The three main boardwalk sections – totaling 740 feet – were rebuilt with state-of-the-art materials. An additional 75 feet of five-foot-wide reinforced polypropyl-

ene boardwalk was also constructed to bridge a wet area near the beginning of the trail.

The Burton Island trailhead is tucked away at the far end of Inlet Road behind Indian River Marina. One trail visitor from Maryland remarked, "If they hid it on purpose, I don't think that the trail could be any harder to find."

I will admit, I had a difficult time locating the trail the first time, but you can easily find it with these directions. Exit Route 1 just north of the Indian River Bridge. Follow Inlet Road past the entrance to North Inlet Beach, past the campgrounds, Coast Guard station and modern state park cabins, and then on past the marina. You will see a very large dry stack boat storage building ahead. Follow Inlet Road around the building. The road changes to gravel and dead ends at the kiosk marking the trailhead.

A stone and earthen causeway, lined with wooden posts, leads across a section of Balder Pond. Indian River Marina can be seen in the distance to the south. According to Long, the causeway was constructed to keep the marina from silting in. However, the causeway's construction was a "happy accident" that provides easy walking access onto Burton Island.

Watch for wading birds, such as herons, egrets, willets and ibises on either side of the causeway, as well as waterfowl. Visitors could be greeted by a glossy ibis, yellow-crowned night heron, snowy and great egrets, mallards or even a surf scoter.

Although you might see mammals, reptiles or amphibians, by far the biggest wildlife attraction is the numerous species of birds that visit or live on the island. According to Cornell University's eBird data, nearly 200 species of birds have been observed on Burton Island. I walked the trail five times last summer and saw different feathered friends each trip.

The "stem" of the lollipop-shaped trail takes you across a short boardwalk, through the dune habitat and to an intersection with the return loop. I usually take the right fork and



**Prickly pear cactus** – Several colonies of prickly-pear cactus brighten up the sand-dune portion of the trail.





**Eastern kingbird** – Several pairs of eastern kingbirds call Burton Island home during the spring and summer months. Kingbirds are members of the flycatcher family.

**View from the longest boardwalk** – Burton Island Trail's boardwalks offer visitors magnificent views of a salt marsh habitat.



**Box turtle** – A female eastern box turtle lays its eggs in the sand along the Burton Island Nature Trail.





**Green heron at the causeway – A green heron, Delaware's smallest heron, can often be seen from the causeway onto Burton Island.**

walk the loop counter-clockwise. The right fork leads across a 150-foot boardwalk with marsh grasses and some open water on both sides. The view to the north across the salt marsh is just spectacular.

On my first visit, a mixed flock of wading birds took to the air – herons and egrets. It was easy to see what attracted the birds, for hundreds of small crabs were scampering through the grasses and mud exposed by low tide.

The trail entered a wooded section and the path was carpeted with pine needles in places. A Carolina wren called from a green-briar thicket, a pair of eastern kingbirds flew from tree to tree, and I spotted a yellow-crowned night-heron perched on a dead snag. The night-heron was a new lifetime species for me.

The maritime forest opened into another marshy area, but I stayed high and dry on a 450-foot-long boardwalk. The trail meandered through another forested section and curved due east. Marsh pink, a small, neon-bright wildflower, brightened this grassy area. A

deer that I startled crashed noisily through the brush.

As I walked through the third and final forested section, I spotted an osprey guarding its nest. Every turn in the trail offered something new to see. The terrain once again opened and a fourth boardwalk crossed a wetland. Just before I intersected back with the main path, I photographed a barn swallow gathering mud for its nest and I discovered an egg-laying box turtle.

If there is one drawback to the Burton Island Trail, it would be the mosquitoes, deer flies, ticks, and chiggers that can be found in mid to late summer. Signs warn about the ticks – both black-legged and lone star.

"I hate to see families heading out there in the summer with shorts and flip flops," Park Superintendent Long said.

Your best defense is to stay on the trail, wear appropriate clothing and use repellent. Even better, plan your visit for early spring or late fall.

The trail is open all year, with the exception of a few days in November and January, when it is closed because of special deer management hunts. If in doubt, visit on Sundays, when hunting is not permitted on state park land.

If you're like me, after one visit, you will likely agree with Park Superintendent Long's remark: "Burton Island is one of the true gems of Delaware Seashore State Park." **OD**

MARK NALE LIVES IN CENTRAL PENNSYLVANIA AND SHARES A SECOND HOME ON THE INDIAN RIVER BAY WITH HIS WIFE. HE IS AN OUTDOOR WRITER/PHOTOGRAPHER AND NATURALIST, WHOSE WORK HAS APPEARED IN NUMEROUS LOCAL, STATE AND NATIONAL PUBLICATIONS. HE IS A REGULAR CONTRIBUTOR TO *OUTDOOR DELAWARE*.



**Salt Marsh from the trail – Even the wooded sections of the trail give guests peeks of the tidal salt marsh that makes up much of the preserve.**



**Barn Swallow – A trail-side puddle provides the perfect place for this barn swallow to gather mud for its nest. Birders have reported 398 species of birds on Burton Island, according to eBird.**







Hérons, egrets & ibis – Burton Island Nature Preserve provides a paradise for wading birds of many species. Seven great egrets, six snowy egrets, five white ibis, three glossy ibis and a tri-colored heron are pictured here with a great blue heron that has captured an American eel.

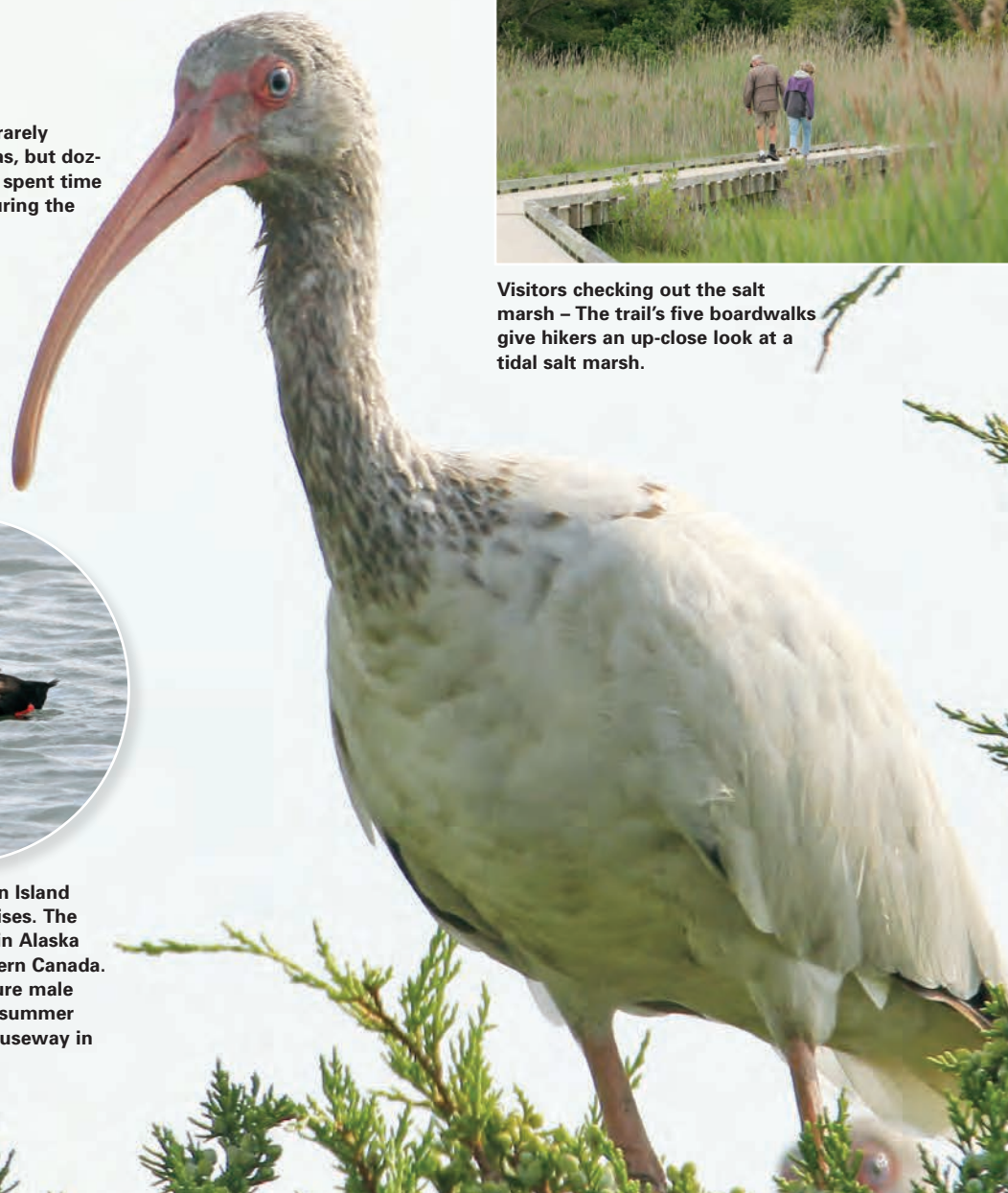
White ibis – The white ibis rarely comes north of the Carolinas, but dozens of the 25-inch-tall birds spent time feeding on Burton Island during the summer of 2017.



Visitors checking out the salt marsh – The trail's five boardwalks give hikers an up-close look at a tidal salt marsh.



Surf scoter – Burton Island Trail is full of surprises. The surf scoter breeds in Alaska and extreme northern Canada. However, this mature male spent much of the summer of 2017 near the causeway in Balders Pond.

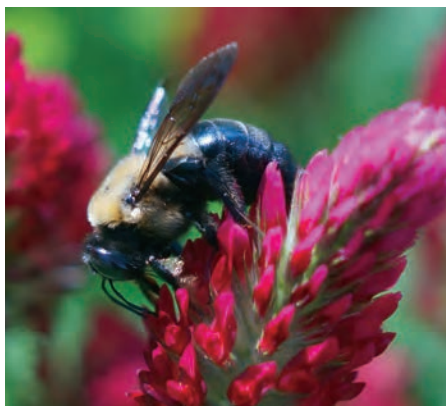






# Music *in the* Great Cypress Swamp

STORY BY WENDY SCOTT • PHOTOS BY ANDREW MARTIN



**A carpenter bee busily gathering nectar from the crimson clover planted as a cover crop at the Roman Fisher Farm.**

**S**PRINGTIME in the Great Cypress Swamp is filled with a symphony of sounds. In the treetops, syncopated drumbeats of woodpeckers ring out among the trills of forest-dwelling warblers. Down below, a lusty chorus of frogs reverberates from the wetlands – treble tones of tree frogs and peepers harmonize with the rhythmic chuckles of southern leopard frogs and the insistent hammering of carpenter frogs. The bullfrogs are the bass players among the amphibians with their deep, thrumming call.

This vast forest – the largest on the Delmarva Peninsula – has always been

a mysterious place that few people have ever experienced. But on Saturday, May 19, you're invited to come see the natural wonders of the Great Cypress Swamp, and hear music of yet another kind – the sounds of human-made, foot-stompin' melodies at the 3rd Annual Baldcypress Bluegrass Festival.

The music festival is a fundraising event hosted by Delaware Wild Lands, a non-profit conservation organization that has been protecting important natural areas throughout the state since 1961. Located on the grounds of a scenic farm they own in Sussex County near Gumboro, the fes-





**Sunset over restored wetlands in Field 7. Waters filtered by the swamp support two major watersheds: the Delaware Inland Bays to the east and the Chesapeake Bay to the west.**

tival's mainstage sits immediately in front of a mature stand of baldcypress trees on the edge of the Great Cypress Swamp. As you listen to bluegrass bands, you'll have views into the forest where the trunks of these enormous trees and hundreds of their knobby cypress knees rise up out of dark tannin-colored water.

Reminiscent of the Deep South, the Great Cypress Swamp once covered nearly 60,000 acres. A long history of ditching and draining for agriculture and development significantly reduced its expanse. Today, Delaware Wild Lands owns and actively manages 10,600 contiguous acres



**A fawn looks both ways before crossing one of the private dirt roads in the swamp.**

here, the majority of what remains of the swamp.

Because of its sensitive ecology and ongoing work to restore wildlife habitat, the Great Cypress Swamp – like all Delaware Wild Lands properties – is not open to unscheduled visitation. So, the Baldcypress Bluegrass Festival is not only a fun event for the whole family, it's also one of the rare opportunities to visit this amazing place.

#### **More than music**

In addition to live music all day, tickets to the Baldcypress Bluegrass Festival also include free bus tours through the Great Cypress Swamp. Ecologists will be on hand to guide the tours and answer questions. As

the bus loops through the swamp, you'll visit sites where Delaware Wild Lands is actively restoring forests, wetlands and wildlife habitat on a large scale.

You'll see water control structures recently installed in the historic ditches, rehydrating hundreds of acres and holding back millions of gallons of water that otherwise would drain away. You'll also see how the results of planting 194,000 native trees since 2011 is bringing back an Atlantic white-cedar and baldcypress forest similar to what would have existed a century ago. You might even see bald eagles, now thriving in the swamp, as they circle above on the thermals.

After your tour, the festival fun continues.

## **Baldcypress Bluegrass Festival**

**When:** Saturday, May 19, 2018, Noon – 6pm

**Five Bands** – Music All Day

**Local Beer & Wine • Food Trucks • Craft Vendors & Lawn Games**

**Free tours of the Great Cypress Swamp**

**Tickets and details:** <https://baldcypress-bluegrass-festival-2018.eventbrite.com>

Bluegrass enthusiasts will be excited by the musical lineup for this year's festival. The headliner band is Johnny Staats & the Delivery Boys from West Virginia. Staats is a world-class mandolin, guitar, and fiddle player. He's been featured on NBC's Today Show, CBS Evening News, and CNN; and in The New York Times and People magazine. Staats and his band have also performed multiple times at the Grand Ole Opry and on NPR's nationally-broadcast show, Mountain Stage. Other bands in the festival line-up will include: New & Spare Fools (shown above), Flatland Drive, and Mountain Ride.







An American bullfrog surveys the scene with its eyes just peeking above the water.

### **Beyond the Swamp: About the Festival's host – Delaware Wild Lands**

The Baldcypress Bluegrass Festival is only in its third year, but Delaware Wild Lands has been working statewide to protect and restore one of the state's most important natural heritage sites since 1961. Today, Delaware Wild Lands owns 21,000 acres and is the largest not-for-profit, non-governmental landowner in Delaware.

All of its lands are carefully managed in ways that result in cleaner air and water, vibrant wildlife habitat, and healthy farms and forests. Delaware Wild Lands also fosters the economic productivity and cultural heritage of their properties. Using sustainable farming, hunting, trapping, and forestry to help reach their goals is a distinctive characteristic that sets them apart from most other conservation organizations.

Delaware Wild Lands has played a pivotal role in the permanent protection of more than 31,000 acres throughout Delmarva. The organization continues to own

## Fun Facts About the Great Cypress Swamp

**Trussum Pond, a piece of the Great Cypress Swamp that is now part of Trap Pond State Park, was Delaware Wild Lands' first-ever land purchase in 1961.**

**The Great Cypress Swamp is one of the northernmost Baldcypress swamp forests in the U.S.**

**The Great Cypress Swamp is the Delmarva Peninsula's largest forest and its largest freshwater wetland.**

**In colonial days, people fleeing religious persecution settled in the swamp. Later, it served as an important stop along the Underground Railroad, and harbored deserting troops during the Civil War.**

**The swamp has concealed all manner of outlaws, and during Prohibition, an exploding still caused a devastating fire that raged for eight months.**

**Research conducted by Delaware Geologic Survey confirmed dinosaurs once roamed the Great Cypress Swamp.**

**Since 2011, Delaware Wild Lands has planted 194,000 native trees in the Great Cypress Swamp.**



**Like all tree frogs, this Cope's gray tree frog has enlarged, sticky toepads. This species is often found on man-made structures like this gate post. Their trilling calls can be heard throughout the swamp on warm spring nights.**

and manage most of these lands; other parcels have been conveyed to partners, such as 1,000 acres around Trussum Pond that is now part of Trap Pond State Park. Delaware Wild Lands approaches conservation like a giant jigsaw puzzle, strategically purchasing land parcels that fit together, expanding their own holdings or creating corridors that connect to other protected areas.

For instance, in Kent County, 10,000 acres and eight miles of beach are protected and managed jointly by Delaware Wild Lands, the state, and The Nature Conservancy. Milford Neck is home to the largest coastal forest and natural dune system remaining in Delaware, where the forces of wind and waves are allowed to sculpt and change the coastline. Officially recognized as a globally significant area for birds, tens of thousands of migratory shorebirds, songbirds, and waterfowl depend on Milford Neck. And each spring, its beaches provide one of the best locations in the world for the spectacle of spawning horseshoe crabs, Delaware's State Marine Animal. **OD**

WENDY SCOTT AND ANDREW MARTIN BOTH WORK FOR DELAWARE WILD LANDS. WENDY IS DEVELOPMENT & MARKETING MANAGER AND ANDREW IS FIELD ECOLOGIST.

SEE MORE OF ANDREW'S PHOTOGRAPHY AT [WWW.PASMPHOTOGRAPHY.SMUGMUG.COM](http://WWW.PASMPHOTOGRAPHY.SMUGMUG.COM).



A big brown bat being banded in the swamp by the Delaware Natural Heritage Program as part of their bat population monitoring program.



# 27 Years as a State Ecologist: *Perspective and Reflections*

BY ROBIN TYLER

I RETIRED THIS PAST FALL having worked over 27 years as an ecologist with DNREC. One may ask, what is an ecologist? My brief definition is: a scientist who studies biology in context with how it interacts with the physical and chemical factors that comprise the environment. Within that universal frame, countless subtopics and numerous career possibilities exist. My DNREC career was focused on the character and condition of fresh and salt water including streams, lakes, rivers and bays, and how the creatures and plants that live within respond to natural and human-related factors.

I designed studies, used all sorts of interesting equipment to collect samples and take measurements, analyzed the data, wrote reports and journal papers that have been cited by other authors around the world, developed presentations and gave them in venues ranging from a living room in Rehoboth Beach to the podiums of national conferences around the U.S. — even got on television a couple of times. I thoroughly enjoyed the work, made several lifelong friends related to it, collaborated with many wonderful and skilled people within and outside of DNREC, and would do most of it again.

Some may wonder, why is it necessary to do such work? It doesn't generate revenue. It costs money. We can't afford that. Rhetorical question, rhetorical statements. To me, the study of biology and the environment just makes common sense. The environment sustains us all and every sector of society lays disruptive, dominating hands on it due to continuous growth in population, pursuit of efforts to make our lives more comfortable and, perhaps above all, simply to make a living. Doesn't it make sense for society to support better understanding of how the environment works and appreciation for it, the effects of our activities, and a system by which knowledge is communicated and applied to improve the quality of life for people and the other creatures and flora with which we share the Earth?

As an Outdoor Delaware reader, you are likely an advocate of



the environment and generally supportive of DNREC's approach to protecting it. Never has the mission to protect the environment and make it the best it can be for ourselves and future generations been more difficult or urgent. Much progress and improvement has occurred over the past 40-50 years, so much so that many Americans have seemingly either forgotten or never knew how bad environmental conditions were in this country prior.

It is amazing to me that these improvements have been made even though from 1970 to 2010, the population of our country grew from 203 million to 308 million. Imagine what conditions might be like had that growth occurred without the restraints due to the laws and regulations that environmental agencies, including DNREC, are charged to uphold. Does anyone, including those who complain about environmental regulations, want a return to situations like the Delaware River in 1942; the smog in Donora, Pa. in 1948; or the waste drums popping up out of backyards in Love Canal, N.Y. in 1978? Of course not.

The problems of today are, in large part, different, less obvious and less acutely life-threatening. They are unpleasant, for sure. They may make you sick, or even be a suspected cause of one's demise someday. Or, they may trigger algal blooms with possible cascading effects on fisheries in downstream waters. It seems fair to suggest that muted support for the environment and trending decline in the robustness of environmental programs across the country may be taken as indications that today's environmental issues are not the kind of in-your-face problems that galvanize the American public at large into action. Might it help get the environment back on center stage again and more support flowing toward environmental stewardship if we could have a river catch on fire in a major city like the Cuyahoga in 1969? Perhaps for a little while, but, no one wants to go back there.

I could talk about specific things I did and tell a couple of fun stories in the remaining space, but they pale in significance to the big picture. I'm going to close out here with my informed opinion



on the importance of knowing history as it pertains to environmental pollution and exploitation in America.

As a state and nation, we cannot afford to relearn this old lesson from new experience. From the beginning of my career, I learned about and developed an appreciation for the importance of the programs that have been put into place because of legislated environmental conservation cornerstones such as the Clean Water Act, Clean Air Act, Toxic Substances Control Act, Migratory Bird Act, Endangered Species Act and others. Most of my career work was related to the Clean Water Act, but it's all intertwined.

Later, my sense of importance for DNREC as an agency was greatly augmented when I realized that in Delaware, we are the only environmental referee/umpire in the never-ending game known as "The Relentless Crush of Modern Society," in which each one of us is a player. Whether or not one is into sports, it is a cultural element with which everyone is familiar, so I'm going to apply an analogy. Can you imagine a baseball or football game without umpires or referees?

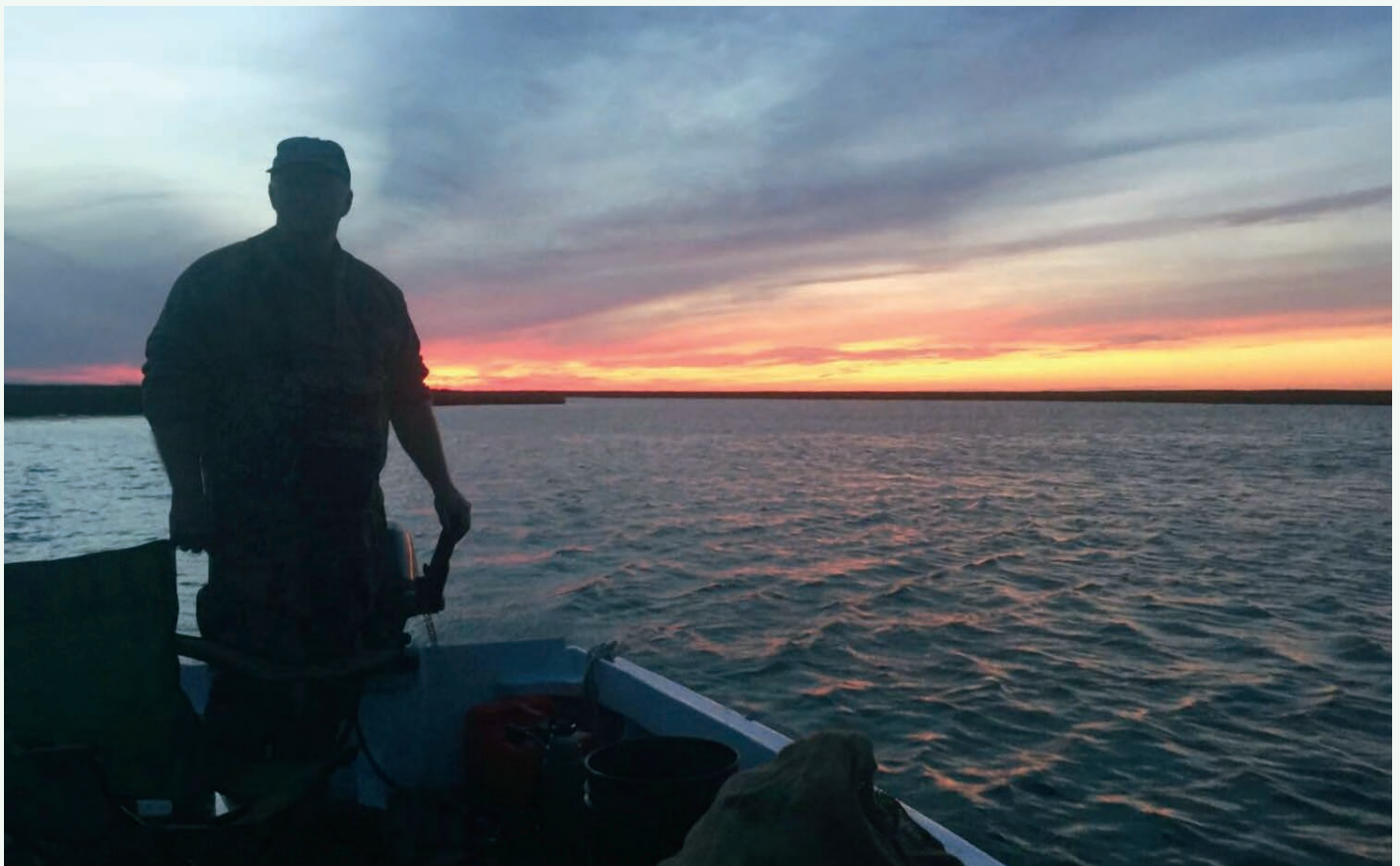
For more than 100 years, we've had some environmental rules, but polluters didn't pay any attention to them because there was no regulatory authority, and little will to enforce them until the establishment of the EPA. The absence of obligatory restraint combined with ignorance, some of it willful, is what resulted in the near complete clear cut of old growth timber, wholesale slaughter for profit of waterfowl and decimations of other wildlife and fishery resources, stinking and flammable rivers, air pollution that reached lethal levels in some places and hazardous waste sites that we're still trying to clean up today.

Today, when you catch striped bass in the Nanticoke River, see

a canvasback duck on Silver Lake in Rehoboth Beach, watch an osprey take a fish off the surface in Mirror Lake within the shadow of Legislative Hall in Dover, breathe easy in downtown Wilmington, or fly across this great country and walk through old growth forest in Olympic National Park, consider that none of us would be able to do that but for the commitments of environmental advocates and professionals of previous generations. Along the way, some questionable or even bad calls get made by the officials, and people affected by them protest. There are replays, and some calls get overturned. Referees and umpires are not infallible, but their presence is necessary, and they do far more good than harm.

Therefore, I encourage all of you to reinforce your knowledge of the reasons why DNREC must be robust and effective in the face of people increasingly questioning the necessity of seemingly unnecessary and excessive environmental regulations that, in fact, contribute to quality of life for everyone – including them. Please support your environmental professionals and the staff around them who are working hard against difficult odds to make our state and country a better place. Lastly, I encourage all of you to get out and enjoy this beautiful and bountiful Delmarvelous area in which we are fortunate to live. **DD**

DR. ROBIN TYLER IS A NATIVE OF DELMARVA AND WAS BORN AND RAISED ON THE LOWER EASTERN SHORE OF MARYLAND. PRIOR TO HIS CAREER WITH DNREC, HE WAS A CHESAPEAKE BAY WATERMAN AND AN ENVIRONMENTAL EDUCATOR WITH THE CHESAPEAKE BAY FOUNDATION. HE AND HIS WIFE LIVE NEAR MAGNOLIA.





## Discover Delaware's State Wildlife Areas | By Rob Gano

### Prime Hook Wildlife Area

DELAWARE'S 662 ACRE STATE PRIME HOOK WILDLIFE AREA adjoins more than 11,000 acres of the federal Prime Hook National Wildlife Refuge. It's located at the end of Little Neck Road just off Route 1 north of Lewes. This small state wildlife area is a little hard to find, and has an "identity crisis" by being overshadowed by its larger federal neighbor, but it is well worth visiting.

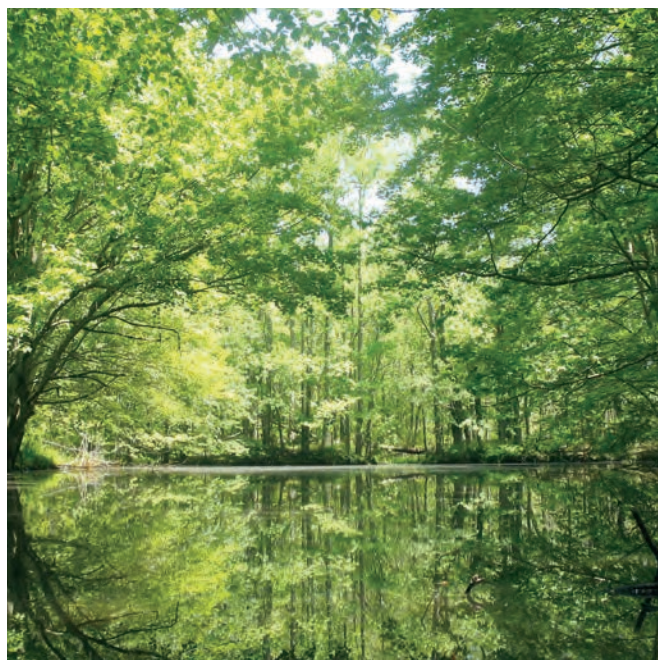
Prime Hook Wildlife Area was initially established in 1958, when the Delaware Board of Fish and Game Commissioners, the precursor to what is now DNREC's Division of Fish & Wildlife, acquired property along Prime Hook Creek. At the time, it was the only protected land along the lower Delaware Bay.

The area is unique for its forests, freshwater wetlands and solitude. The forest habitat is characterized by an open understory with extremely large, mature white oak and tulip poplar trees towering over a dense stand of American holly. This is a unique and rare plant community that is truly worth seeing.

Over the last 20 years, several wildlife habitat restoration projects have been completed throughout the wildlife area. One of the most interesting of these is the planting of a series of hedgerows and food plots that, in 2008, prompted the infamous "cross sighting," due to the unintended alignment and visual appearance of a cross when viewed from the air.

Another large project involved the reforestation of 29 acres by planting a variety of oak, water hickory, tulip poplar and black gum trees in an abandoned agricultural field. Today, these trees have grown into a dense young forest, which in time will mirror the surrounding majestic mature woods.

As you venture into the Prime Hook Wildlife Area, you will find several small trails leading to 10 deer stands, with these informal trails offering hiking opportunities following hunting season, as they wind through a variety of habitats. Some trails lead to the swamp along Prime Hook Creek. Birdwatchers can enjoy the sights and sounds of a thriving songbird community,



and waterfowl hunters can hunt from blinds under the joint state/federal hunting program. The area is also open for squirrel and wild turkey hunting.

A Conservation Access Pass (CAP) is now needed for motor vehicles used to access wildlife areas, with the CAP providing revenues needed to manage and maintain wildlife areas. More information on the CAP can be found on the Division's web page.

While the Prime Hook Wildlife Area is small and secluded, those attributes and the special habitats add to its appeal, and make for a unique and enjoyable outdoor experience. Explore and find out for yourself. **OD**

ROB GANO IS THE DIVISION OF FISH & WILDLIFE'S SUSSEX COUNTY REGIONAL MANAGER



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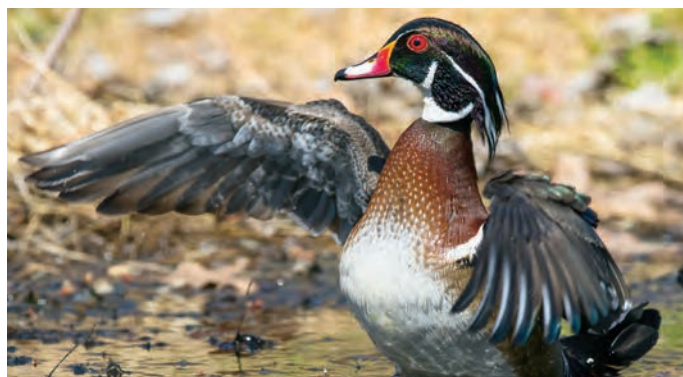
## Hunting | Bill Jones



ONE OF THE THINGS I LOVE about spring is the addition of color to the landscape. Whether the new hues are provided by plant or animal doesn't matter; it's just nice seeing more than the drab grays and browns of winter. One bird that provides more than its share of color is the male wood duck, especially when it's in breeding plumage. Many consider it to be our most beautiful duck with its iridescent chestnuts and greens and bold white markings on its face and body.

At the turn of the 20th century, the nationwide wood duck population was in serious decline. Total protection was given to the species during the period of 1918-1941, and this along with habitat management programs allowed the species to recover. The woodie is a tree cavity nester but in many areas suitable natural nesting sites are scarce. Based on research conducted in the late 1930s it was found that woodies readily take to artificial nesting structures. Since then, nest box programs initiated by state wildlife agencies and private citizens have been very successful in boosting local populations around the country.

Most of the first nesting boxes were made out of wood, generally cedar or oak. If anyone has ever tried to put one of the wooden ones up, you know how heavy and unwieldy they can be. Renowned wood duck expert Frank Bellrose worked with the company Cattail Products to produce a very effective, lightweight, and easy-to-maintain box out of recycled milk jugs. For many years DNREC's Division of Fish & Wildlife has offered these boxes to landowners below cost as an incentive to put them on the landscape. The Division uses proceeds from the sales of State Duck



DOUG NORTON

Stamps to subsidize the program. By subsidizing the program with proceeds from the sale of Delaware Waterfowl Stamps, the Division is able to sell the boxes – which currently cost more than \$51 – to landowners for just \$30. This is an excellent deal and boxes are available at regional offices located on the Augustine, Norman G. Wilder and Assawoman wildlife areas.

Retired Division regional manager Wayne Lehman found the boxes are also great roosting and nesting areas for screech owls through his research. It turns out the owls leave the box if a wood duck shows up, and then moves back in when the woodies have moved on. Talk about sub-leasing the place!

For more information contact the Division at 302-284-4795. **OD**

BILL JONES IS THE KENT COUNTY REGIONAL WILDLIFE MANAGER AND PRIVATE LANDS BIOLOGIST – AND AN AVID HUNTER.

## Delaware Bayshore Initiative | by Anthony Gonzon

ON THE DELAWARE BAYSHORE, one truly amazing sight to witness happens each spring in May. You can see it along almost any Delaware Bay beach and it's the perfect opportunity to see something that most people will never experience, and one that I promise you will never forget.

For those of you that have not already guessed what I am referring to, I am describing the annual coming together of two natural cycles – the northward migration of shorebirds, and the spawning of horseshoe crabs. Where else can you witness such an interaction that draws thousands of visitors to the Delaware Bayshore? I strongly encourage you to get out on the Delaware Bayshore this spring and make it a memory of your own. To help you do that, here are some useful tips:

**When:** May – anytime in May will work, but the best times are around the full moon and new moon when tides are highest. Try the new moon around the middle of the month or the full moon at the end of May.

**Where:** Horseshoe crabs and shorebirds can be found at almost every Delaware Bay beach south of Port Mahon. Some of

the best viewing can be found at the Mispillion Harbor from the deck of the DuPont Nature Center at the end of Lighthouse Road and at nearby Slaughter Beach. Beginning May 1, the center is open from 10 a.m. through 4 p.m. Tuesday through Sunday (closed Monday), but the deck is always accessible from sunrise to sunset.

**What:** Bring your binoculars and camera. While you don't absolutely need them, they will make the experience that much better.

**Who:** This is an experience everyone can share. Learn more about the crabs, the birds and why the Delaware Bayshore is so important to their survival. **OD**

ANTHONY GONZON IS THE COORDINATOR OF THE DELAWARE BAYSHORE INITIATIVE IN DNREC'S DIVISION OF FISH AND WILDLIFE.



CHRIS BENNETT



## Your State Parks



### 2018 Annual Park Pass Features the Historic Sugar Bowl

**D**NREC's Division of Parks & Recreation highlights a special park or park feature on Annual Park passes each year to demonstrate the beautiful parks and amenities to pass holders. The 2018 annual pass showcases the recently renovated historic Sugar Bowl pavilion located in Wilmington State Parks.

Nestled on the rocky cliffs overlooking the Brandywine River, the Sugar Bowl is located in Brandywine Park. Following the national trend of park building, the city of Wilmington created Brandywine Park in 1883 to give residents relief from city living and harsh factory work. To

enhance this urban retreat, the park board installed amenities such as pavilions and gazebos. One such gazebo, the Sugar Bowl, was completed in 1902. Its domed roof, made of concrete, was said to resemble the lid of a sugar bowl. The cast iron support structure was produced at the American Bridge Company's Edgemoor Branch.

The gazebo served many uses: it was a site for meetings, concerts, church services, community and patriotic programs. It also marked the original entrance of the Brandywine Zoo. Unfortunately, it fell into such disrepair that it was slowly dismantled beginning in 1949 with the removal of the roof.

In the end, all that remained was a concrete base. In 2006, the Friends of Wilmington Parks took on the task of restoring the Sugar Bowl to its former glory. The restoration was completed

with the installation of the fiberglass roof in June of 2016. Park visitors can again enjoy beautiful views and experience nature in the heart of the city.

Annual park passes can be purchased online by going to [www.destateparks.com](http://www.destateparks.com), state park offices, DNREC's licensing desk, 89 Kings Highway,



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Dover DE 19901, or from license dealers statewide. All revenue collected for annual park passes and surf permits go directly into the state park operations, maintenance, enforcement, activities and special events throughout the state. **OD**

## Fishing | Jordan Zimmerman



**I**T'S A WELL-KNOWN FACT that the earlier we are introduced to the outdoors, the more likely we are to include outdoor recreation in to our everyday lives as adults. Researchers have found that getting outside, even for as little as five minutes at a time, improves mood and self-esteem. In this day and age, it has become increasingly difficult to inspire youngsters to put down the electronic devices and video games, turn off the T.V., and experience the natural world. Fishing is a great activity for youngsters to jump-start interest in the natural environment. There is no time like the present to mold the next generation of environmental stewards.

As a father, I have found that I have to temper my expectations for an excursion and allow time for the inevitable baiting, unhooking, and picking backlashes from reels. However, I have found that it is all extremely worthwhile when I witness the pure joy of a "nice catch," or simply the feeling of assurance that my offspring will be better off for the experience, and of course, just plain having fun.

From lessons I have learned, I'd like to offer some suggestions that may help hedge your bets for a successful outing:

Take them to the "bank" – "Bank," or shore-based angling, puts you within reach of the preferred habitat of most freshwater fish – brush piles, lily pads, and slight drop-offs that many species congregate around. And maybe what starts out as fishing trip

evolves into a game of catch with a Frisbee or a football, or even a nature walk that can be just as gratifying.

Low-tech vs. high tech – Keep it simple for younger, less-experienced anglers. Kids as young as three years old usually have the motor skills to handle a bamboo "cane" pole. Rarely is it necessary to employ mechanized reels and make long casts to get your bait around fish.

Lures vs. bait – Earthworms, crickets, and grasshoppers make terrific bait for fish of all sizes and are typically available in your backyard or a local park. Capturing such prey also provides a fun experience for youngsters, lending to the overall enjoyment of the outing. As your children become more proficient with their fishing skills, incorporate top-water floating plugs and baits as few things are more exciting than fish blowing up on a surface bait.

Hopefully these tips will help your young anglers have success and foster their inherent passion for the outdoors. The greater the love they gain for the natural environment, the happier they will be, and the more likely they will be to protect our environment for the next generation. **OD**

JORDAN ZIMMERMAN IS WITH THE FISHERIES SECTION OF DNREC'S DIVISION OF FISH & WILDLIFE. A DELAWARE NATIVE, HE HAS FISHED JUST ABOUT EVERY POND AND BODY OF WATER IN THE STATE.





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